


The Registration of Vital Statistics and Good Business

An Address Delivered before the ANNUAL CONFERENCE OF
HEALTH OFFICERS OF THE STATE OF INDIANA
Indianapolis, May 13, 1913

BY

LOUIS I. DUBLIN, PH.D., Statistician
Metropolitan Life Insurance Company, New York

1913



Digitized by the Internet Archive
in 2017 with funding from
University of Illinois Urbana-Champaign Alternates

614.1
D85Rr

THE REGISTRATION OF VITAL STATISTICS AND GOOD BUSINESS.*

17713 SIG 2002

It is a most auspicious occasion that brings together the health officers and representative business and professional men of the State of Indiana to discuss health affairs. The subject of public health is no longer looked upon as exclusively within the province of the medical profession. This is a promising sign of the changing attitude of communities to what concerns them most vitally. Progressive health officers themselves recognize that their work is communal in character and that the success of their endeavors will depend largely upon the co-operation which they receive from the public at large, and, more especially, from the leaders of public opinion who determine the expenditure of public funds.

The medical men present will pardon my audacity if I still further indicate that the intrusion of lay minds and lay points of view is contributing very essential stimuli to the development of modern medicine. The contributions of the engineer, the educator, the statistician and the statesman to the field of preventive medicine have been of the greatest value. They have helped to extend the interest of medical science from the consideration of individual cases to the solution of broader communal problems. This process has, indeed, been carried to such a point that at a recent discussion by health officers it was seriously urged that much would be gained in the advancement of public health through the appointment of qualified non-medical officers for the enforcement and interpretation of sanitary regulations. This is not a proper occasion for the discussion of this question, but I refer to it only to indicate how appropriate it is for those who represent the other professions and activities in your communities to get together with the health authorities to-night to consider with them the many matters that vitally concern you.

*An address delivered at the public meeting of the Annual Conference of Health Officers of the State of Indiana, Indianapolis, May 13, 1913.

The subject which your able State Secretary, Dr. Hurty, has suggested for my paper is "The Registration of Vital Statistics and Good Business." In the very title there is the implication that this phase of health administration is closely related to business affairs and can be tested by the same standards that are used daily to determine the value or lack of value of other industrial activities.

Statistics, in brief, is a system of accounting. The executive in industry and finance requires for the efficient administration of his business detailed analyses of the cost of production and distribution. Aside from the assistance which such statistics give him in the determination of a selling price for the product, they furnish him above all with a convenient method for checking the efficiency of his plant management. Cost accounting requires that each unit of raw material shall be traced through the factory in such manner that the value which every process adds to it is recorded. Through these accounts, the executive learns whether it is profitable to substitute machines for hand labor. He is also enabled to detect ill-advised applications of labor and wastefulness in the manipulation of materials. Such evils, unless immediately discovered, lead to inefficiency and the subsequent disorganization of an otherwise well-conducted enterprise.

The health officer of the community has a problem similar to that of the business manager in industry. He, too, must test the efficiency of his management. His raw materials are the human beings of his district. He must be able to trace the path of these individuals through life, from the date of their birth, through the years of their childhood to their maturity and marriage, until finally death terminates their record in the community's book of accounts. He must check up his methods of procedure in combating disease and must be in a position to determine whether the forces which he has applied are productive of results. He also should be immediately apprised of any new perils to the public health which may arise. If his administration is one of mere routine, handling details only, without inspiration and the force of directive ideas, then his community is on the road to civic inefficiency with all the disorganization that this implies.

It is the function of the vital statistician to provide the necessary data to the health officer for the settlement of these questions. He must know from year to year the composition and characteristics of the population. He must also have available an accurate

record of the number of additions to the population by births and immigration, and of the number of deaths, marriages and divorces. Finally, he must know the number, location and intensity of the incidences of transmissible disease. Such, in brief, is the subject matter of vital statistics.

Let us now consider the intimate aspects of each of these subordinate fields of vital statistics.

COMPOSITION AND CHARACTERISTICS OF THE POPULATION.

Knowledge of the composition and characteristics of the population is fundamental for the vital statistician. It is to him what an inventory is to the industrial engineer. He must have at his disposal an enumeration by age, sex, race, nationality and marital condition and by such other characteristics as are indicated by the peculiar conditions prevailing in his community. The age distribution, for example, is vital to any intelligent consideration of the death rate. Newer communities where the proportion of infants is small often show a lower death rate than others with better health standards where the distribution of the component parts is more nearly normal. The distribution by sex is indicative of the extent to which a community is settled in its social and moral standards. Recently settled communities show a marked excess of males; it is only when the female element has attained its normal proportion that there come into evidence those characteristics of social and moral stability which are attributes of modern civilization. The race factor is important in determining the educational program of a community as well as in testing the prevailing mortality conditions. The nationalities composing a community outline the problem confronting social and philanthropic agencies whose work it is to help assimilate the alien and to adjust his condition harmoniously to the rest of the community. Information of this character, renewed every five years, should be of incalculable value in determining conditions of community life, and should serve as an index of progress or retrogression.

BIRTHS.

Births are the primary items of population income. They are interesting as to their actual number, an excess of births over deaths constituting the natural increment of population. From the number of births we derive birth rates, or the ratio between

the number of births and the number of persons living. Nothing reflects better the vitality of a community than its birth rate. The associated factors of legitimacy, nationality and social position of parents throw light on the problem of national fecundity and indicate from which sources our population is being derived.

No phase of social hygiene has recently received more attention than the conservation of infant life. The movement has received great impetus since the establishment of the Children's Bureau in Washington under the direction of Miss Julia C. Lathrop. This organization has defined its first problem to be the determination of the birth and death rates of infants, but in this work it is hampered by the fact that in only eight States of the country are records kept with sufficient accuracy to justify any conclusions. Thousands of children are born annually in our country and are neither recorded at the time of their birth nor at their death, which in more than one-fifth of the cases occurs during their first year of life.

Legal considerations of the highest importance enter into the registration of births. Communities are waking up to their obligations to restrict child labor. Without adequate registration of births such regulation is hampered and the law often nullified in its effect. In this way, many children are deprived of education and are permitted to waste their limited energies in industrial pursuits, later to become the subjects of community relief. The transactions of life insurance companies frequently call for the legal proof of true age. Since the differences in premium charges vary with the age, it will be seen that the factor of age is essential to the determination of the amount of benefit which is to be paid at death. A case in point from the experience of the Metropolitan Life will be of interest. There is now in suit a case where the insured's age, according to the policy, was fifty years at the time of death; according to the health department register, the true age at death was seventy-two. In this case, if the transcript of the birth certificate could have been secured, it would very quickly have settled the question as to the true age at death. The insured was born in a foreign country, however, which had no better facilities for the registration of births than many States in our Union now have.

A case nearer home will also be of interest. A boy of thirteen, residing in Indiana, was insured with us in 1904 under one name, and his mother was designated as beneficiary under the policy. In

March, 1913, he advised us that he had been insured under a wrong name, and that the relationship of the beneficiary as given was incorrect. In proof of the contention made we desired a certified copy of the birth record of the boy to establish his identity, but we were informed that no official birth record could be obtained, although the names in the case represented old and well-known families in the county. It would appear, therefore, that in this State the records of births were not kept with any degree of accuracy as recently as the year 1892. Some countries are more fortunate. Great Britain, Germany, France, Italy and Sweden have had a compulsory system of birth registration for many years. From these countries records of birth are obtained with the least expenditure of time and effort.

The establishment of personal identity often depends upon the validity of a birth record. Litigation in matters of property inheritance, the settlement of estates and the disposition of trusts, can in many instances be avoided when accurate birth records are at hand. Special problems in the morbid aspects of social life, such as the age of consent, the gravity of the offense in criminal cases, etc., depend upon efficient birth registration. Nor can we say just what social readjustments are necessary in dealing with the acute problem of illegitimacy, because we lack utterly information upon which to base an intelligent analysis of the situation.

MARRIAGES.

The statistics of marriage are in close connection with birth statistics. Data of this nature are of value to investigators of community welfare. The marriage rate is in the nature of a barometer of a nation's prosperity. In countries where accurate marriage statistics have been kept the records show that periods of commercial prosperity have been marked with consistently high marriage rates, and those of depression with low rates. The physical and mental condition of the parties to marriages is also of vital importance to the State and should be made a matter of record. Evidences are already at hand that many of our social and even economic problems are caused by the mating of inferior stock. Alcoholics, the shiftless, imbeciles and criminals are permitted, through marriage, to aggravate our social problems by indiscriminate breeding and thereby perpetuate their like to act as even heavier burdens on future generations. In this country the students of eugenics have no accurate data to guide

them in their endeavors for the improvement of our national race stock. Our neglect to provide intelligible birth and marriage statistics is a source of grave social loss, and I cannot urge too strongly your active participation in all efforts which will improve our statistics of these social facts.

The legal aspects of marriage registration are strikingly brought home to us in the life insurance business. Life insurance companies and other organizations administering trust funds are constantly involved in expensive litigation to establish the validity of claims arising out of defective or non-existent records of marriage. Questions sometimes arise as to the identity of wives named as beneficiaries in policy contracts. A typical case from our own experience will interest you. An unmarried lady was named in a policy of \$10,000 as the beneficiary. After her subsequent marriage, she requested the Company to change the name entered upon the policy to the one she assumed at marriage. As is our uniform practice in such cases, we requested a certified copy of the marriage certificate, in order to protect the interests of all parties to the contract and avoid future litigation. Unfortunately, no certified record was obtainable, and we were obliged, with reluctance, to accept an affidavit from the parties concerned. These are possible sources of litigation. Other instances occur where more than one claimant appears as the beneficiary under the contract, each claiming to be the wife of the deceased. In such cases, a marriage certificate is necessary to establish the truth, in order that the Company may proceed to settle its obligations. The lack of these fundamental documents in civic accounting leads invariably to confusion and economic loss which, in the last analysis, is borne by the community at large.

DEATHS.

We can consider as our fourth point of investigation into the subject matter of vital statistics, the significance of death registration. A death constitutes a loss to the community especially when young lives, full of promise and potential usefulness, are terminated. It is obvious that in community management the losses should be closely analyzed as to age, cause of death, economic and social condition of the deceased, etc., to indicate the precise lines of endeavor which the health officer and other officials should institute for the prevention of similar losses. This surely would

be the procedure in the conduct of private business, and there is no reason why community losses should not be subject to the same scrutiny.

The complete registration of deaths makes possible the calculation of a death rate. Death rates, however, require a supplementary analysis before community wastes can be traced to their sources. The first step in the analysis is the calculation of the rates by ages, for, as you well know, the age constitution of a population is an important factor in determining its total mortality. With this fuller knowledge, the authorities can make a comparison with the experience of other communities to ascertain whether their losses are abnormal at any particular age. It is a common occurrence for communities with normal general death rates to suffer excessively at certain ages. Such facts can then be brought to the attention of responsible officials and their energies directed to specific remedial measures.

The utility of accurate mortality statistics by ages has never before been demonstrated with such emphasis as in the movement for the conservation of infant life. Agencies for education and practical social work, such as nursing associations, diet kitchens, milk stations and others, are concentrating their energies upon the solution of this problem which is of such intimate concern to society at large. The work of these institutions for preventing infant mortality is directed at improved sanitation, better housing, and the education of mothers in the care of infants, and their efforts depend wholly upon the prior and exhaustive knowledge which good statistics alone can develop.

Again, the incidences of sex, nationality and occupation have their effect in coloring death rates of communities. A superabundance of deaths in a certain occupation-group indicates the presence of adverse industrial conditions and points out the need for the enforcement of the labor laws or the necessity for more stringent legislation. The ultimate effect of occupation upon the health of women in industry is, moreover, made evident by a minute study of mortality data from the standpoint of occupation and sex. The tabulation of deaths and death rates by locality is also of use in discovering whether the application of special neighborhood health work is necessary. When one section of a city contributes more than its share of typhoid deaths, it is certain that local sanitary conditions need supervision and correction. By inaugurating proper measures, the causes may often be removed

and the disease prevented from extending its ravages to other parts of the city.

You will now readily see the importance of recording full and accurate statements of the essential particulars regarding deaths. Items of name, age, place of death, date of death, marital condition, parentage and an accurate statement of all the morbid conditions which have had any bearing upon the death, should receive the utmost attention from health officers. No part of a death certificate should be admitted to the official files of the health offices until every error of fact is adjusted. Some State laws, fortunately, require registration officials to demand definite information from physicians, coroners and midwives who fill out such certificates, whenever data are missing, inaccurate, indefinite or incomplete. In other States, and they are the larger number, the registration laws are of indefinite force; and the returns reflect this condition. Only a stern and unrelenting criticism of documents can make statistics of this character reliable.

The accurate statement of the cause of death is, of all the items in the death certificate, the most important, and at the same time it involves the greatest difficulty in tabulation. In order that the utmost practical value may be obtained from the returns, it is necessary to adopt a uniform system of classification which will permit the comparison of mortality statistics of different communities. The requirement for international comparability is admirably met by the Bertillon Classification, now in use by the leading registration offices throughout the world. This International List, as you know, comprises 189 standard titles which are grouped under 14 general headings. Each standard title in the list includes under it the names of the diseases or conditions which can properly be classified with it. Thus, under "Typhoid Fever" we find such synonyms as "Continued Fever," "Enteric Fever," etc. Registration officials who in their practice meet with these rarer terms on death certificates, therefore, classify such returns uniformly under the "Typhoid Fever" title. It will readily be seen that uniformity of this character is absolutely essential to the comparability of typhoid fever rates, especially since various designations are still extensively employed in different sections of the country to describe the same morbid conditions. Other titles present similar problems of classification which are solved by the use of the International List. To this end, I most earnestly recommend the close study of the Bertillon system of classification

by health officers, and especially of its discussion of the technique of classification for "multiple" causes of death.

Returns of Cause of Death should include all the morbid conditions contributing to the death, together with a statement of the duration of the disease and of its complications. It is especially important that the terms employed shall be of the standard nomenclature of the International Classification. The designation of terminal conditions, such as "peritonitis," "acute nephritis," "paralysis," "dropsy" and "meningitis," and of such vague returns as "marasmus," "heart failure," "hemorrhage," "convulsions" and "fractures," are wholly undesirable, and should be sharply questioned by health officers for more definite information which will permit of intelligent tabulation of the data. Nearly eight per cent. of the death certificates which enter the statistical laboratory of the Metropolitan Life Insurance Company present Cause of Death returns which require further information to permit of accurate tabulation. It is our practice to address a letter of inquiry to the physician or coroner signing the certificate in each case for more definite data, and it is gratifying to observe that in the large number of cases, clarifying replies are received in place of the earlier indefinite and unsatisfactory returns. Thus, in twenty-six returns of peritonitis without qualification, inquiry revealed that three deaths were caused by self-induced abortion, two by criminal abortion, two by appendicitis, three by puerperal fever, one by gonococcus infection, and the rest by causes such as alcoholism, tuberculosis, traumatism by falling, typhoid fever and cancer. Not one of the twenty-six cases was ultimately classified as "peritonitis."

These facts are reflected in Chart I, which shows the successive annual death rate from such indefinite causes as "peritonitis" and "dropsy" for the years 1900 to 1911 inclusive. You will see that the number of cases under these two titles have regularly decreased in frequency. This is undoubtedly the result of the more rigid requirements of the Census Bureau, which consistently returns such an assignment of the cause of death to the certifying physician for a more definite statement of the cause.

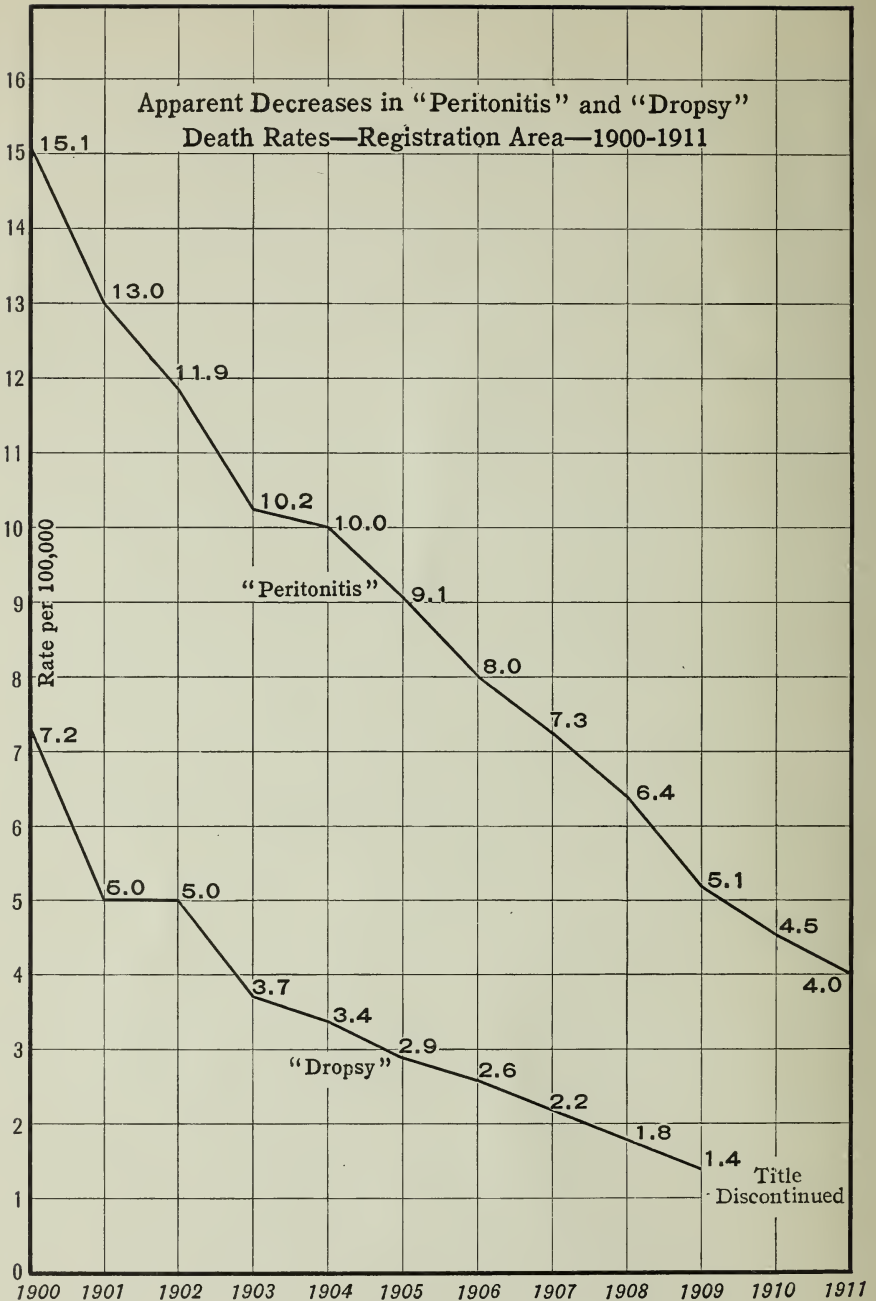


CHART I

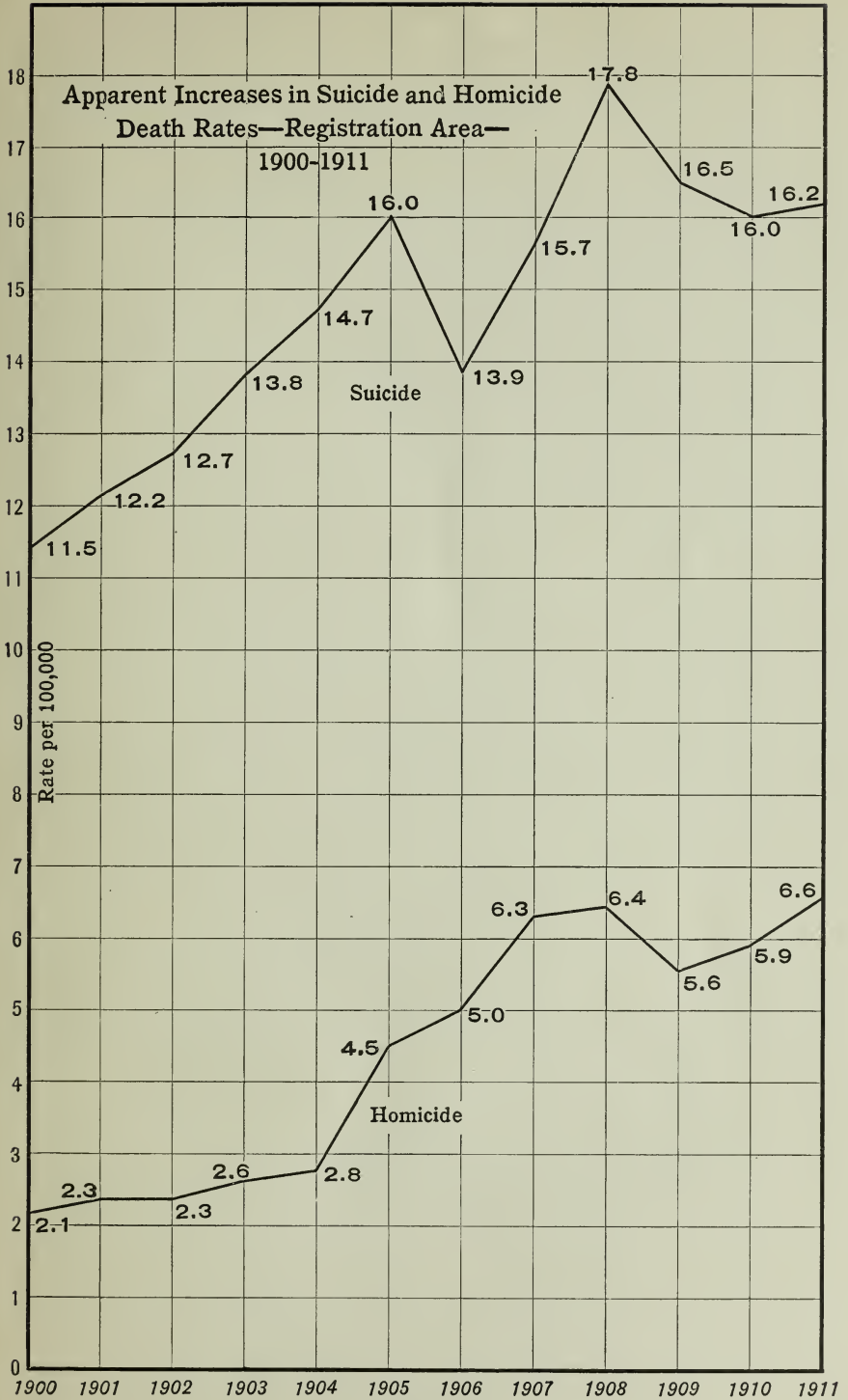


CHART II

The term "poisoning" without further definition is often converted upon inquiry to a statement of "suicide," as have also numerous instances of so-called "drowning." "Gunshot wounds" turn out to be clear cases of "homicide," while "fractures," upon further investigation, are found to be masked cases of railroad, automobile and machinery accidents. It is not surprising, therefore, to find, as is shown in Chart II, that the rates for "homicide" and "suicide" have increased regularly during the period since the inauguration of more scientific compiling methods. In the light of this fact, it is difficult to determine whether the indicated increases really represent a greater incidence of homicide and suicide in the Registration Area, or rather the effect of more efficient statistical methods.

Inquiries into returns of "meningitis" develop the existence of the acute infectious diseases such as "scarlet fever," "diphtheria," "measles" and "whooping-cough." The return "pneumonia," in like manner, is a mask for a whole host of more definite conditions such as "measles," "scarlet fever," "traumatism" and "alcoholism." In view of the special interest of the community in these conditions, it is extremely important that there shall be especially complete registration of the cases in which the communicable diseases are the determining causes. It is reprehensible enough when the substitution of a terminal condition for a primary cause leads to the over-registration of undesirable titles, but what is more serious, is, that in this way, fatal cases of infectious and contagious diseases or of industrial and general violence are left unrecorded.

SICKNESS.

Finally, the statistics of sickness are materials for the vital statistician. The subject is, however, of such vast import that it will be impossible to refer to it in this address beyond the statement that it is through the analysis of case records of illness that much light is thrown upon the causal phases of disease and also upon clinical treatment. Statistics are, moreover, the chief test at the disposal of the community of its effective control over transmissible disease. To-day, millions of dollars are being expended annually by communities in their campaigns against tuberculosis and other disorders, with the hope that the various activities may check disease at one point or another. It is for a statistical investigation to determine the degree to which these

efforts have been productive of results. Thus will be decided the fate of such experiments as visiting nursing, disinfection, isolation, sanatorium treatment for incipient tuberculosis and other ventures still under judgment.

In concluding this discussion of the business value of registration, I hope that I have indicated the extent and character of the losses which result from neglect of thoroughly registering vital phenomena. If communities were to realize that they are called upon ultimately to meet these losses, I think that we would have an awakening of public interest in careful civic accounting of human life. A wide-awake development in this direction would favorably affect the transaction of business along many lines. In life insurance companies alone, fully one-quarter of the disputes would never arise were adequate records at hand. The saving of losses due to present litigation could then be returned as larger benefits to our clients, and would remove many causes for dissatisfaction. We cannot regard these losses as anything more than downright waste.

The solution of the problems is entirely in your hands. Surely you must see that it is good business for a community to take these necessary precautions to account for its most vital resources. Nothing less than a most efficient system of accounting is now tolerated in any line of modern business, and surely the most important business, that which is concerned with the physical welfare of us all, should not be satisfied with anything less.

STANDARD CERTIFICATES OF BIRTH AND DEATH.

(Instructions on certain points may be printed on the back. Size of certificate, 6 1/2 x 7 1/2 inches.)
MARGIN RESERVED FOR BINDING
WRITE PLAINLY, WITH UNFADING INK—THIS IS A PERMANENT RECORD
 N. B.—In case of more than one child at a birth, a SEPARATE CERTIFICATE must be made for each, and the number of each, in order of birth, stated

PLACE OF BIRTH		Department of Commerce and Labor BUREAU OF THE CENSUS	
County of _____		STANDARD CERTIFICATE OF BIRTH	
Township of _____		Registered No. _____	
Village of _____		St. _____ Ward _____	
City of _____ (No. _____)			
FULL NAME OF CHILD _____		[If child is not yet named, make supplemental report, as directed]	
Sex of Child _____	Twin, triplet, or other? _____ <small>(To be answered only in event of plural births)</small>	Number in order of birth _____	Legitimate? _____
		Date of birth _____ 19____ <small>(Month) (Day) (Year)</small>	
FATHER		MOTHER	
FULL NAME _____		FULL MAIDEN NAME _____	
RESIDENCE _____		RESIDENCE _____	
COLOR _____ AGE AT LAST BIRTHDAY _____ (Years)		COLOR _____ AGE AT LAST BIRTHDAY _____ (Years)	
BIRTHPLACE _____		BIRTHPLACE _____	
OCCUPATION _____		OCCUPATION _____	
Number of children born to this mother, including present birth _____		Number of children of this mother now living _____	
CERTIFICATE OF ATTENDING PHYSICIAN OR MIDWIFE*			
I hereby certify that I attended the birth of this child, who was _____ at _____, Mo., on the date above stated.			
*When there was no attending physician or midwife, then the father, householder, etc., should make this return. A stillborn child is one that neither breathes nor shows other evidence of life after birth.		(Signature) _____ <small>(Physician or Midwife)</small>	
Given name added from a supplemental report _____ 19____		Address _____	
Filed _____ 19____		REGISTRAR 11-385 B	

MARGIN RESERVED FOR BINDING
WRITE PLAINLY, WITH UNFADING INK—THIS IS A PERMANENT RECORD
 N. B.—Careful care of information should be carefully supplied. AGE should be stated EXACTLY. PHYSICIANS should state important facts of pregnancy, childbirth, and exact statement of OCCUPATION if very important. See instructions on back of certificate.

PLACE OF DEATH		Department of Commerce and Labor BUREAU OF THE CENSUS	
County of _____		STANDARD CERTIFICATE OF DEATH	
Township of _____		Registered No. _____	
Village of _____		St. _____ Ward _____	
City of _____ (No. _____)			
FULL NAME _____		[If death occurred in a hospital or institution, give its NAME instead of street and number.]	
PERSONAL AND STATISTICAL PARTICULARS		MEDICAL CERTIFICATE OF DEATH	
SEX _____	COLOR OR RACE _____	SINGLE, MARRIED, WIDOWED, OR DIVORCED <small>(Write in full words)</small>	DATE OF DEATH _____ 19____ <small>(Month) (Day) (Year)</small>
DATE OF BIRTH _____ 19____ <small>(Month) (Day) (Year)</small>			17 I HEREBY CERTIFY, That I attended deceased from _____ 19____, to _____ 19____, that I last saw him _____ alive on _____ 19____, and that death occurred, on the date stated above, at _____ m. The CAUSE OF DEATH* was as follows: _____ (Duration) _____ yrs. _____ mos. _____ ds. Contributory (Secondary) _____ (Duration) _____ yrs. _____ mos. _____ ds. (Signed) _____ (Address) _____ 19____
AGE _____ yrs. _____ mos. _____ ds. If LESS than 1 day, _____ hrs. 24 _____ min. ?			
OCCUPATION (a) Trade, profession, or particular kind of work. (b) General nature of industry, business, or establishment in which employed (or employer).			*State the DISEASE CAUSING DEATH, or, in deaths from VIOLENT CAUSES, state (1) MEANS OF INJURY; and (2) WHETHER ACCIDENTAL, SUICIDAL, or HOMICIDAL. 18 LENGTH OF RESIDENCE (FOR HOSPITALS, INSTITUTIONS, TRANSIENTS, OR RECENT RESIDENTS) At place of death _____ yrs. _____ mos. _____ ds. In the _____ State _____ yrs. _____ mos. _____ ds. Where was disease contracted, if not at place of death? Former or usual residence.
BIRTHPLACE (State or country)			
PARENTS 10 NAME OF FATHER _____ 11 BIRTHPLACE OF FATHER (State or country) _____ 12 MAIDEN NAME OF MOTHER _____ 13 BIRTHPLACE OF MOTHER (State or country) _____			
14 THE ABOVE IS TRUE TO THE BEST OF MY KNOWLEDGE (Informant) _____ (Address) _____			
Filed _____ 19____		REGISTRAR	
15		19 PLACE OF BURIAL OR REMOVAL _____ DATE OF BURIAL _____ 19____	
16		20 UNDERTAKER _____ ADDRESS _____	
11-314			

Good vital statistics depend upon these certificates.
 Do you use them in your State ?





3 0112 105540378



S137